REMARKS

This responds to the Office Action mailed on November 5, 2004.

Claims 1, 28, 29, 36 and 44 are amended, claims 15, 19-27, 32 and 45-48 are canceled, and no claims are added; as a result, claims 1-14, 16-18, 28-31 and 33-44 are now pending in this application.

§112 Rejection of the Claims

Claims 45-48 were rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The rejection states that the specification does not disclose the method of providing null data when selected channel register is empty in claim 45 and that the specification also does not disclose the method of applying a strobe signal when null data is provided in claim 46.

With this amendment the rejection of claims 45-48 have been cancelled without prejudice, and therefore the rejection of these claims is deemed moot. Applicant has cancelled these claims while retaining the right to file a continuation application regarding this subject matter.

Claims 19-27 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. With this amendment Applicant has cancelled these claims while retaining the right to file a continuation application regarding this subject matter.

§102 Rejection of the Claims

Claims 1-2 and 36 were rejected under 35 USC § 102(b) as being anticipated by Holm et al. ('680).

Holm et al. relates to a multiple channel data communication buffer that includes a first side having a plurality of communication ports and a second side having data routing port. A single port transmit memory is coupled between the plurality of communication ports and the

arbitrates access by the plurality of communication ports and the data routing port to the single port transmit memory. A single port receive memory is coupled between the plurality of communication ports and the data routing port. A receive arbitration circuit coupled to the single port receive memory, which arbitrates access by the plurality of communication ports and the data routing port to the single port receive memory.

Claims 1 and 38 are independent claims, and claims 2-18 are dependent on claim 1. Claims 39-43 are dependent claims that are dependent on claim 38.

The Examiner alleged that, regarding claim 1, Holm discloses a communications interface, comprising: a bus interface (Figure 1, 30-33) coupleable to an internal bus(Figure 1, 60 and 62), a plurality of transmit channels coupled to the bus interface (Figure 1, 70-73); a transmit control block (Figure 1, 40) coupled to the plurality of transmit channels; a plurality of outbound links coupled to a plurality of outputs of the transmit control block (Figure 1, 50); a plurality of receive channels coupled to the bus interface (Figure 1, 80-83); and a receive control block (Figure 1, 42) coupled to the plurality of receive channels; and a plurality of inbound links coupled to a plurality of inputs of the receive control block (Figure 1, 52), the inbound links and the outbound links to couple the bus interface to a further bus interface (Column 2, Lines 35-40; It is inherent a further bus interface is connected to the links).

With this amendment Applicant has incorporated the subject matter of claim 15 into independent claim1. Independent claim 1 now has the elements of: a stop message channel coupled to the receive control block and adapted to send a stop message to a source when a receive FIFO reaches a stop threshold value; and a start message channel coupled to the receive control block and adapted to send a start message to the source when the receive FIFO reaches a start threshold value. Since these elements are not disclosed or suggested by Holm, the rejection of claim 1 and dependent claim 2 has been overcome. The Examiner is therefore respectively requested to reconsider the rejection of these claims under 35 USC § 102(b) as being anticipated by Holm et al.

Regarding claim 36, the Examiner alleged that Holm discloses a method of forming a communications interface, comprising: forming a bus interface (Figure 1, 30-33); forming a plurality of transmit channels coupled to the bus interface (Figure 1, 70-73); forming a transmit control block (Figure 1, 40) coupled to the plurality of transmit channels; forming a plurality of

control block (Figure 1, 40) coupled to the plurality of transmit channels; forming a plurality of outbound links coupled to a plurality of outputs of the transmit control block (Figure 1, 50); forming a plurality of receive control channels coupled to the bus interface (Figure 1, 80-83); forming a receive control block (Figure 1, 42) coupled to the plurality of receive control channels; and forming a plurality of inbound links coupled to a plurality of inputs of the receive control block (Figure 1, 52), the inbound links and the outbound links to couple the bus interface to a further bus interface (Column 2, Lines 35-40; It is inherent a further bus interface is connected to the links).

With this amendment Applicant has incorporated the following subject matter into independent claim 36. Independent claim 36 now has the elements of: forming a stop message channel coupled to the receive control block and adapted to send a stop message to a source when a receive FIFO reaches a stop threshold value; and forming a start message channel coupled to the receive control block and adapted to send a start message to the source when the receive FIFO reaches a start threshold value. Since these elements are not disclosed or suggested by Holm, the rejection of claim 36 has been overcome. The Examiner is therefore respectively requested to reconsider the rejection of this claim under 35 USC § 102(b) as being anticipated by Holm et al.

Claims 1-13, 16-18, and 36-44 were rejected under 35 USC § 102(e) as being anticipated by Baker ('938).

Baker relates to a In a PCI-interface device, and a method and system that autonomously outputs video data from data packets including a header portion and a video data portion. The invention receives the data packets in a data packet transfer device, and associates an address with a plurality of address fields within the data packets. Decoding of the header portion and an address segment within the video data portion occurs to determine whether the header portion comprises a vertical synch signal. Also, the address segment of the video data portion is decoded to determine whether the video data portion comprises a horizontal synch signal. The header portion is separated from the video data portion and then flows the video data portion into a zoom port.

The Examiner alleged that, regarding claim 1, Baker discloses a communications interface, comprising: a bus interface (Figure 2, 104) coupleable to an internal bus, a plurality of

to the plurality of transmit channels (Figure 2, 78 and 90 combined); a plurality of outbound links coupled to a plurality of outputs of the transmit control block (Figure 1, 16); a plurality of receive channels coupled to the bus interface (DMA channels), and a receive control block (Figure 2, 78 and 90 combined) coupled to the plurality of receive channels; and a plurality of inbound links coupled to a plurality of inputs of the receive control block (Figure 1, 16), the inbound links and the outbound links to couple the bus interface to a further bus interface (Figure 1, 18).

With this amendment Applicant has incorporated the subject matter of claim 15 into independent claim1. Independent claim 1 now has the elements of: a stop message channel coupled to the receive control block and adapted to send a stop message to a source when a receive FIFO reaches a stop threshold value; and a start message channel coupled to the receive control block and adapted to send a start message to the source when the receive FIFO reaches a start threshold value. Since these elements are not disclosed or suggested by Baker, the rejection of claim 1 and the respective dependent claims has been overcome. The Examiner is therefore respectively requested to reconsider the rejection of these claims under 35 USC § 102(b) as being anticipated by Baker.

Regarding claim 36, the Examiner alleged that Baker discloses a method of forming a communications interface, comprising: forming a bus interface (Figure 2, 104), forming a plurality of transmit channels coupled to the bus interface (DMA channels); forming a transmit control block coupled to the plurality of transmit channels (Figure 2, 78 and 90 combined); forming a plurality of outbound links coupled to a plurality of outputs of the transmit control block (Figure 1, 16); forming a plurality of receive channels coupled to the bus interface (DMA channels); forming a receive control block (Figure 2, 78 and 90 combined) coupled to the plurality of receive channels; and forming a plurality of inbound links coupled to a plurality of inputs of the receive control block (Figure 1, 16), the inbound links and the outbound links to couple the bus interface to a further bus interface (Figure 1, 18).

With this amendment Applicant has incorporated the following subject matter into independent claim 36. Independent claim 36 now has the elements of: forming a stop message channel coupled to the receive control block and adapted to send a stop message to a source when a receive FIFO reaches a stop threshold value; and forming a start message channel

coupled to the receive control block and adapted to send a start message to the source when the receive FIFO reaches a start threshold value. Since these elements are not disclosed or suggested by Baker, the rejection of claim 36 has been overcome. The Examiner is therefore respectively requested to reconsider the rejection of this claim under 35 USC § 102(b) as being anticipated by Baker.

The Examiner also alleged that, regarding claim 44, Baker discloses a method comprising: supplying a clock signal from a first terminal; supplying a strobe signal from a second terminal; providing an identification value corresponding to a selected channel register from data terminals when the strobe signal is active; providing data from the selected channel register at the data terminals when the strobe signal is inactive, the data changing in accordance with the clock signal; and providing a third terminal that receives a wait signal that keeps the data provided at the data terminals from changing (Figure 12, Column 17, Lines 3450).

Baker appears to relate to a PCI interface autonomously outputting video data from data packets, which include a header portion and a data portion. As such, Baker does not disclose an interface coupleable to an internal bus as claim 44 provides. Baker relates to a bus interface coupled to DMA logic and a Transmit control block, but does not show, for example, "a plurality of outbound links coupled to the plurality of outputs of the transmit control block" as claim 44 requires.

With this amendment Applicant has incorporated the following subject matter into independent claim 44. Independent claim 44 now has the elements of: providing a stop message channel coupled to the receive control block and adapted to send a stop message to a source when a receive FIFO reaches a stop threshold value; and providing a start message channel coupled to the receive control block and adapted to send a start message to the source when the receive FIFO reaches a start threshold value. Since these elements are not disclosed or suggested by Baker, the rejection of claim 44 has been overcome. The Examiner is therefore respectively requested to reconsider the rejection of this claim under 35 USC § 102(b) as being anticipated by Baker.

§103 Rejection of the Claims

Claim 7 was rejected under 35 USC § 103(a) as being unpatentable over Baker in view of what is well known in the art.

The Examiner admitted that Baker does not specifically disclose a power management unit coupled to each of the plurality of transmit channels and receive channels. However, the Examiner stated that Official Notice is being taken that advantages of power management are well known in the art. The Examiner then concluded that it would have been obvious to include a power management unit in the system of Baker since this would allow power to be saved during periods of inactivity.

Claim 7 is a dependent claim that is dependent on independent claim 1. Therefore with the amendment to claim 1 and for the reasons set forth above the rejection of claim 7 under 35 USC § 103(a) has been overcome and the Examiner is respectively requested to reconsider this rejection.

Claims 14-15 and 28-34 were rejected under 35 USC § 103(a) as being unpatentable over Baker in view of Earnest ('338).

Earnst relates to a multiple-channel data communication buffer that includes a transmit first-in-first-out ("FIFO") circuit and a receive FIFO circuit. The transmit and receive FIFO circuits each include a write pointer array, a read pointer array and a single memory device having a data input, a data output, a write address input, a read address input and a plurality of logical channels from the data input to the data output. The write pointer array has a write pointer for each of the logical channels and applies a selected one of the write pointers to the write address input based on a write channel number input. The read pointer array has a read pointer for each of the logical channels and applies a selected one of the read pointers to the read address input based on a read channel number input.

Regarding claim 28, the Examiner alleged that Baker discloses a method of transmitting data between semiconductor chips, comprising writing data into at least one of a plurality of transmit FIFOs (Figure 2, 82, 84); selecting one of the plurality of transmit FIFOs that contains data to be transmitted and that is not in a wait state (Column 14, Lines 20-28; Column 18, Lines 58-60).

The Examiner admitted that Baker does not disclose transmitting the data to a corresponding one of the plurality of receive FIFOs that has not exceeded a threshold value. The

Examiner then alleged that Earnest discloses transmitting the data to a corresponding one of the plurality of receive FIFOs that has not exceeded a threshold value (Column 11, Lines 40-45). The Examiner then concludes that it would have been obvious to combine the teachings of Earnest, with that of Baker, since this would prevent the writing of data in FIFO that has no more room for data.

Claim 35 was rejected under 35 USC § 103(a) as being unpatentable over Baker in view of Earnest and further in view of Holm.

Claim 35 is a dependent claim that is dependent on independent claim 28. Therefore with the amendment to claim 28 and for the reasons set forth above the rejection of claim 35 under 35 USC § 103(a) has been overcome and the Examiner is respectively requested to reconsider this rejection.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, John Garrett at (847) 508-2371, or Applicant's below-named representative to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date March 7, 2005

By _____
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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 7th day of March, 2005.

Chris Hammond
Name

Chris Hammond
Signature

IN THE DRAWINGS

The drawings were objected to under 37 CFR 1.83(a). The Examiner stated that the drawings must show every feature of the invention specified in the claims. Therefore, the second communications interface includes a bus interface coupled to the first semiconductor chip must be shown or the feature(s) canceled from the claim(s).

This subject matter was covered by claims 19-27, which have been cancelled in this amendment. Therefore the objection to the drawings is deemed moot, and no drawing corrections are required.